

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1. (allowed) An isolated population of insulin-producing cells obtained from non-insulin-producing cells by a process comprising contacting the non-insulin-producing cells *in vitro* for at least twenty-four hours with an amount of a substance effective to induce insulin production, wherein the substance is selected from the group consisting of a GLP-1 peptide, a GLP-1 peptide containing one or more conservative amino acid substitutions at positions other than positions 7, 10, 12, 13 and 15 of GLP-1, and a fragment of any one of the preceding GLP-1 peptides, and wherein the GLP-1 peptide or fragment thereof has the ability to differentiate non-insulin-producing cells into insulin-producing cells.

2-4. (canceled).

5. (allowed) The population of claim 1, wherein the non-insulin-producing cells comprise pancreatic cells.

6. (allowed) The population of claim 1, wherein the non-insulin-producing cells comprise pancreatic acinar cells.

7. (allowed) The population of claim 1, wherein the non-insulin-producing cells comprise stem cells.

8. (allowed) The population of claim 1, wherein the non-insulin-producing cells comprise pancreatic stem cells.

9. (allowed) The population of claim 1, wherein the non-insulin-producing cells comprise mammalian cells.

10. (allowed) The population of claim 9, wherein the mammalian cells comprise human cells.

11. (canceled)

12. (allowed) An isolated population of insulin-producing cells obtained from non-insulin-producing cells by a process comprising contacting the non-insulin-producing cells *in vitro* for at

least twenty-four hours with an amount of a substance effective to induce insulin production, wherein the substance is selected from the group consisting of an Exendin-4 peptide, an Exendin-4 peptide containing one or more conservative amino acid substitutions at positions other than positions 1, 4, 6, 7 and 9 of Exendin-4, and a fragment of any one of the preceding Exendin-4 peptides, and wherein the Exendin-4 peptide or fragment thereof has the ability to differentiate non-insulin-producing cells into insulin-producing cells.

13-15. (canceled)

16. (allowed) The population of claim 12, wherein the non-insulin-producing cells comprise pancreatic cells.

17. (allowed) The population of claim 12, wherein the non-insulin-producing cells comprise pancreatic acinar cells.

18. (allowed) The population of claim 12, wherein the non-insulin-producing cells comprise stem cells.

19. (allowed) The population of claim 12, wherein the non-insulin-producing cells comprise pancreatic stem cells.

20. (allowed) The population of claim 12, wherein the non-insulin-producing cells comprise mammalian cells.

21. (allowed) The population of claim 20, wherein the mammalian cells comprise human cells.

22-24. (canceled)

25. (allowed) A method for differentiating non-insulin-producing cells into insulin-producing cells, comprising contacting the non-insulin-producing cells *in vitro* for at least twenty four hours with an amount of a substance effective to induce differentiation of non-insulin-producing cells into insulin-producing cells, wherein the substance is selected from the group consisting of a GLP-1 peptide, a GLP-1 peptide containing one or more conservative amino acid substitutions at positions other than positions 7, 10, 12, 13 and 15 of GLP-1, and a fragment of any one of the preceding GLP-1 peptides, and wherein the GLP-1 peptide or fragment thereof has the ability to differentiate non-insulin-producing cells into insulin-producing cells.

26-28. (canceled)

29. (allowed) A method for differentiating non-insulin-producing cells into insulin-producing cells, comprising contacting the non-insulin- producing cells *in vitro* for at least twenty four hours with an amount of a substance effective to induce differentiation of non-insulin-producing cells into insulin-producing cells, wherein the substance is selected from the group consisting of an Exendin-4 peptide, an Exendin-4 peptide containing one or more conservative amino acid substitutions at positions other than positions 1, 4, 6, 7 and 9 of Exendin-4, and a fragment of any one of the preceding Exendin-4 peptides, and wherein the Exendin-4 peptide or fragment thereof has the ability to differentiate non-insulin-producing cells into insulin-producing cells.

30. (canceled)

31. (allowed) A method of enriching an isolated population of cells for insulin-producing cells, comprising contacting non-insulin-producing cells *in vitro* for at least twenty four hours with an amount of a substance effective to induce differentiation of non-insulin- producing cells into insulin-producing cells, wherein the substance is selected from the group consisting of a GLP-1 peptide, a GLP-1 peptide containing one or more conservative amino acid substitutions at positions other than positions 7, 10, 12, 13 and 15 of GLP-1, 4, and a fragments of any one of the preceding peptides, and wherein the peptide or fragments thereof has the ability to differentiate non-insulin-producing cells into insulin-producing cells.

32. (allowed) A method of promoting pancreatic amylase-producing cells to produce insulin, comprising contacting the pancreatic amylase-producing cells *in vitro* for at least twenty-four hours with an amount of a substance effective to induce insulin production, wherein the substance is selected from the group consisting of a GLP-1 peptide, a GLP-1 peptide containing one or more conservative amino acid substitutions at positions other than positions 7, 10, 12, 13 and 15 of GLP-1, and a fragment of any one of the preceding peptides, and wherein the GLP-1 peptide or fragment thereof has the ability to differentiate non-insulin-producing cells into insulin-producing cells.

33. (allowed) A method of promoting pancreatic amylase-producing cells to produce insulin, comprising contacting the pancreatic amylase-producing cells *in vitro* for at least twenty- four

hours with an amount of a substance effective to induce insulin production, wherein the substance is selected from the group consisting of an Exendin-4 peptide, an Exendin-4 peptide containing one or more conservative amino acid substitutions at positions other than 1, 4, 6, 7 and 9 of Exendin-4, and a fragment of any one of the preceding peptides, and wherein the Exendin-4 peptide or fragment thereof has the ability to differentiate non-insulin-producing cells into insulin-producing cells.

34-52. (canceled)

53. (allowed) A method of enriching an isolated population of cells for insulin-producing cells, comprising contacting non-insulin-producing cells *in vitro* for at least twenty-four hours with an amount of a substance effective to induce differentiation of non-insulin-producing cells into insulin-producing cells, wherein the substance is selected from the group consisting of an Exendin-4 peptide, an Exendin-4 peptide containing one or more conservative amino acid substitutions at positions other than 1, 4, 6, 7 and 9 of Exendin-4, and a fragment of any one of the preceding peptides, and wherein the peptide or fragment thereof has the ability to differentiate non-insulin-producing cells into insulin-producing cells.

54-74. (canceled)

75. (new) The composition of claim 1, wherein the contacting is at least 3 days.

76. (new) The composition of claim 1, wherein greater than 50% of the non-insulin-producing cells differentiate into insulin-producing cells.

77. (new) The composition of claim 1, wherein the substance is a GLP-1 peptide.

78. (new) The composition of claim 1, wherein the substance is a GLP-1 peptide containing one or more conservative amino acid substitutions at positions other than positions 7, 10, 12, 13 and 15 of GLP-1.

79. (new) The composition of claim 1, wherein the substance is the fragment of a GLP-1 peptide, a GLP-1 peptide containing one or more conservative amino acid substitutions at positions other than positions 7, 10, 12, 13 and 15 of GLP-1.

80. (new) The composition of claim 12, wherein the contacting is at least 3 days.

81. (new) The composition of claim 12, wherein greater than 50% of the non-insulin-producing cells differentiate into insulin-producing cells.
82. (new) The composition of claim 12, wherein the substance is exendin-4.
83. (new) The composition of claim 12, wherein the substance is an Exendin-4 peptide containing one or more conservative amino acid substitutions at positions other than positions 1, 4, 6, 7 and 9 of Exendin-4.
84. (new) The composition of claim 12, wherein the substance is the fragment of an Exendin-4 peptide, an Exendin-4 peptide containing one or more conservative amino acid substitutions at positions other than 1, 4, 6, 7 and 9 of Exendin-4.
85. (new) The method of claim 25, wherein the non-insulin-producing cells comprise pancreatic cells, pancreatic acinar cells, stem cells, pancreatic stem cells, or mammalian cells.
86. (new) The method of claim 85, wherein the mammalian cells are human cells.
87. (new) The method of claim 25, wherein the contacting is at least 3 days.
88. (new) The method of claims 25, wherein greater than 50% of the non-insulin-producing cells differentiate into insulin-producing cells.
89. (new) The method of claim 25, wherein the substance is a GLP-1 peptide.
90. (new) The method of claims 25, wherein the substance is a GLP-1 peptide containing one or more conservative amino acid substitutions at positions other than positions 7, 10, 12, 13 and 15 of GLP-1.
91. (new) The method of claims 25, wherein the substance is the fragment of a GLP-1 peptide, a GLP-1 peptide containing one or more conservative amino acid substitutions at positions other than positions 7, 10, 12, 13 and 15 of GLP-1.
92. (new) The method of claim 29, wherein the non-insulin-producing cells comprise pancreatic cells, pancreatic acinar cells, stem cells, pancreatic stem cells, or mammalian cells.
93. (new) The method of claim 92, wherein the mammalian cells are human cells.
94. (new) The method of claim 29, wherein the contacting is at least 3 days.

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95. (new) The method of claim 29, wherein greater than 50% of the non-insulin-producing cells differentiate into insulin-producing cells.
96. (new) The method of claim 29, wherein the substance is exendin-4.
97. (new) The method of claim 29, wherein the substance is an Exendin-4 peptide containing one or more conservative amino acid substitutions at positions other than positions 1, 4, 6, 7 and 9 of Exendin-4.
98. (new) The method of claims 29, wherein the substance is the fragment of an Exendin-4 peptide, an Exendin-4 peptide containing one or more conservative amino acid substitutions at positions other than 1, 4, 6, 7 and 9 of Exendin-4.